

CLAIMS

1. A method of improving network availability in a segmented network, comprising the steps of:
 - 5 periodically transmitting a test message over a plurality of communication links from a source node in communication with a source network segment to a plurality of destination nodes, each of the plurality of destination nodes being in communication with a respective destination network segment;
generating, for each of the plurality of destination nodes, a return message if the test
10 message is received at the destination node;
determining the status of each of the plurality of communication links in response to the return messages generated by the plurality of destination nodes; and
providing the status of the plurality of communication links to each of the plurality of destination nodes that generated a return message.
- 15 2. The method of claim 1, wherein the step of determining the status further comprises indicating a fault in one of said one or more paths if said source node does not receive at least a predetermined number of return messages from said destination nodes in response to a predetermined number of test messages transmitted to said destination nodes.
3. The method of claim 1, and further comprising the step of configuring one of said
20 paths between said source node and said one or more destination nodes in response to the determined status.
4. The method of claim 1, wherein the test message is an LLC type 1 frame format.
5. The method of claim 1, wherein the return message is an echo message generated in response to the test message.
- 25 6. The method of claim 1, wherein the source and destination nodes are selected from the group consisting of a host, a router and a load balancer.
7. The method of claim 1, and further comprising the step of updating a routing table in response to the determined status.

8. The method of claim 1, wherein the step of configuring includes avoiding paths through dead links between nodes or paths connecting to unresponsive destination nodes.
9. The method of claim 1, wherein determining the status includes the steps of:

waiting a pre-determined period of time for the return message from a destination node, and

5 if the status of the destination node has changed, the source node updating a local adjacency status table, and propagating an updated routing table to other nodes on the segmented network.
10. The method of claim 1, wherein said test message is not sent within the same segment.
- 10 11. The method of claim 1, wherein the test message is transmitted approximately once per second.
12. A system for improving availability comprising:

a plurality of destination nodes in communication with a respective one of a plurality of destination network segments, each of the destination nodes configured to receive a test
15 message through one of a plurality of communication links and generate a return message;

a source node in communication with each of the plurality of destination nodes, the source node configured to provide a test message to each of the plurality of destination nodes, and for determining the status of each of the plurality of communications links in response to the return messages; and
20 a configuration update module in communication with the source node and the plurality of destination nodes, the configuration update module providing a status message to each of the destination nodes that provides a return message to the source node.
13. The system of claim 12 wherein the source node transmits the test message approximately once per second.
- 25 14. The system of claim 12 wherein the source nodes and the destination nodes are selected from the group consisting of a host, a router and a load balancer.
15. The system of claim 12 wherein the test message is an LLC type 1 frame format.
16. The system of claim 12 wherein the return message is an echo message of the test message.

17. A system for improving network availability in a segmented network, comprising:

a first network segment having a plurality of connected source nodes,

a second network segment having a plurality of connected destination nodes, said second network segment connected to said first network segment over one or more paths;

5 identification means for identifying from one or more source nodes one or more cooperating destination nodes,

transmission means for periodically transmitting a test message over the one or more paths from a source node to one or more destination nodes; said transmission means in response to a return message received from said destination nodes, determining the status of said one

10 or more paths; and

status update means for providing said status to each of the plurality of destination nodes that generated a return message.

18. The system of claim 17, further comprising fault indicating means for indicating a fault in one of said one or more paths if said source node does not receive at least a
15 predetermined number of return messages from said destination nodes in response to a predetermined number of test messages transmitted to said destination nodes.

19. The system of claim 17, further comprising configuration means for configuring one of said paths between said source node and said destination nodes in response to said determined status.